

Identification of γ -transitions in Tc and Cs products of ^{252}Cf fission and possible $7/2^+ [413]$ bands in $^{105-109}\text{Tc}$ Isotopes*

J.K. Hwang, A.V. Ramayya, J.H. Hamilton

Physics Department, Vanderbilt University, Nashville, TN 37235, USA

J. Gilat, J.O. Rasmussen, R.B. Firestone

Nuclear Science Division, Lawrence Berkeley National Laboratory, Berkeley, CA 94720, USA

M.A. Stoyer

Lawrence Livermore National Laboratory, Livermore, CA 94550, USA

Others of the GANDS95 Collaboration

Several γ -transitions in $^{105-109}\text{Tc}$ nuclei were identified for the first time from spontaneous fission studies with a ^{252}Cf source and Gammaphase. New level schemes are proposed and related to the underlying nuclear structure. Positive-parity bands with a large signature splitting observed in $^{105,107,109}\text{Tc}$ are evidently derived from $g_{9/2}$ orbitals and are similar to analogous bands in ^{103}Rh , ^{103}Ag and ^{99}Y . New γ -transitions have also been identified in $^{139-143}\text{Cs}$ and used to construct level schemes for these isotopes. Correlated-pair fission yields extracted from the data show an appreciable yield of the 0ν $^{109}\text{Tc}/^{143}\text{Cs}$ pair.

Footnotes and References

* For further details see this paper, submitted to Phys. Rev. C.

For GANDS95 list of authors and institutions see B.R.S. Babu et al., Phys. Rev. **C54 (1996) 568